TAN-5550

AEP Model

STEREO POWER AMPLIFIER

SPECIFICATIONS

POWER AMPLIFIER SECTION

Continuous RMS Power Output: (rated output) (Less than 0.1 % harmonic distortion)
Both channels driven simultaneously
At 20 ~ 20,000 Hz
50 + 50 W (8Ω)
At 1 kHz
60 + 60 W (8Ω)
50 + 50 W (4Ω)
According to DIN 45500
60 + 60 W (8Ω)

Dynamic Power Output: (IHF constant power supply method)
160 W (8Ω)
140 W (4Ω)

Power Bandwidth: 5 ~ 40,000 Hz, IHF

Damping Factor: 100 (8 Ω, at 1 kHz)

Harmonic Distortion: Less than 0.1 % at rated output
Less than 0.08 % at 1 W output

IM Distortion: (60 Hz : 7 kHz = 4 : 1)
Less than 0.1 % at rated output
Less than 0.08 % at 1 W output

Frequency Response:
10 ~ 100,000 Hz $^{+0}_{-2}$ dB
(NORMAL/TEST switches at NORMAL)
DC ~ 100,000 Hz $^{+0}_{-2}$ dB
(NORMAL/TEST switches at TEST)

S/N Ratio: Greater than 110 dB, short-circuited input

Residual Noise: Less than 0.02 μW (8 Ω)

Inputs: Sensitivity 1.0 V (for rated output)
Impedance 50 kΩ

Outputs: SPEAKER A, B terminals
Accept 4 ~ 16 Ω speakers

GENERAL

Circuits: Phase-linear dc stereo power amplifier in direct-coupled V-FET pure complementary symmetry circuitry

Power Requirements: 110, 127, 220 or 240 V ac, 50/60 Hz

Power Consumption: 680 W

AC Outlet: 1 unswitched, 400 W

Dimensions: Approx.
460 (w) x 168 (h) x 305 (d) mm
$18\frac{1}{8}$ (w) x $6\frac{5}{8}$ (h) x $12\frac{1}{8}$ (d) inches
Including projecting parts and controls

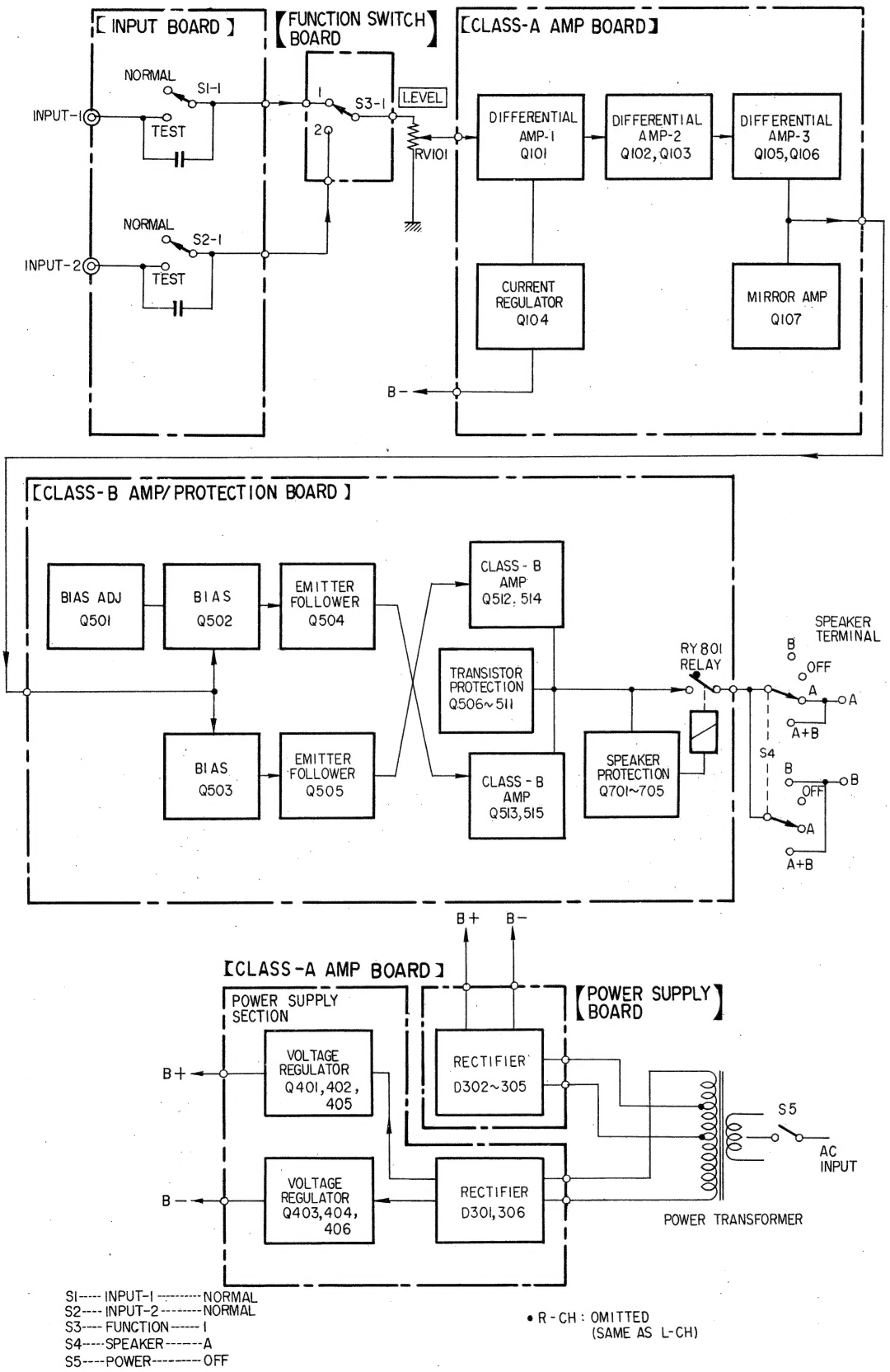
Weight: Approx. 12.5 kg, 27 lb 9 oz (net)
Approx. 14.9 kg, 32 lb 16 oz (with shipping carton)

SONY®

SERVICE MANUAL

SECTION 1
OUTLINE

1-1. BLOCK DIAGRAM



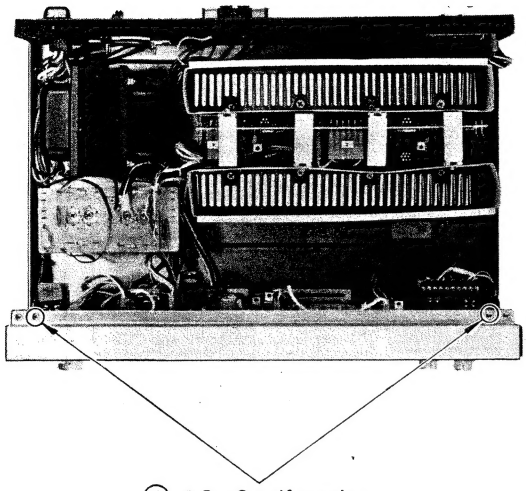
S1---- INPUT-1 --------- NORMAL
S2---- INPUT-2 -------- NORMAL
S3---- FUNCTION ------ 1
S4----- SPEAKER ------- A
S5----- POWER --------- OFF

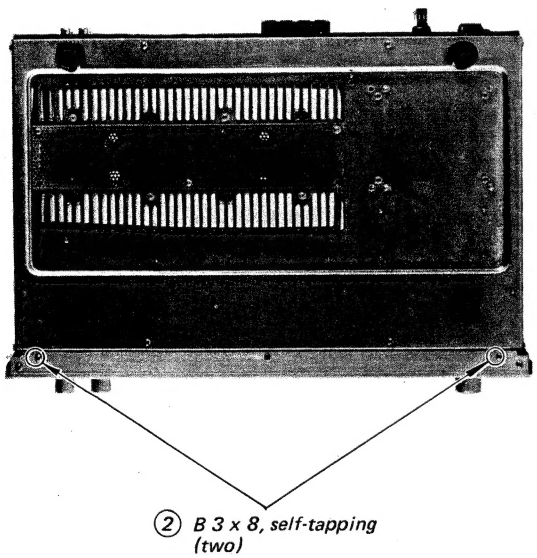
• R-CH : OMITTED
(SAME AS L-CH)

1-2. DISASSEMBLY

Front Panel Removal

Remove ① and ② .



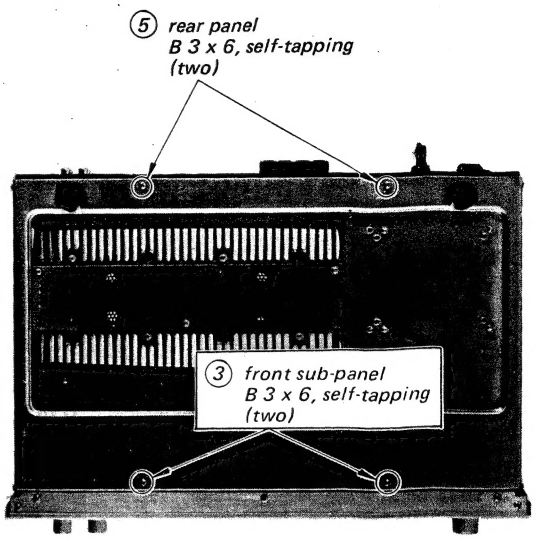


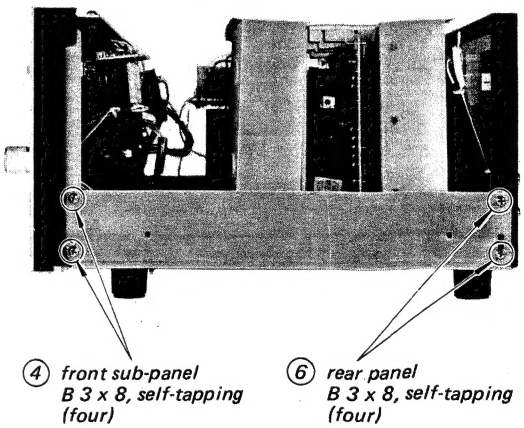
Front Sub-panel Removal

Remove ③ and ④ .

Rear Panel Removal

Remove ⑤ and ⑥ .



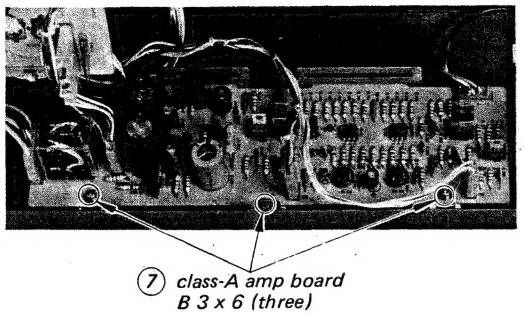


Input Board Removal

1. Remove screws on slide switches.
2. Remove nylon rivets with 4-P pin jack.

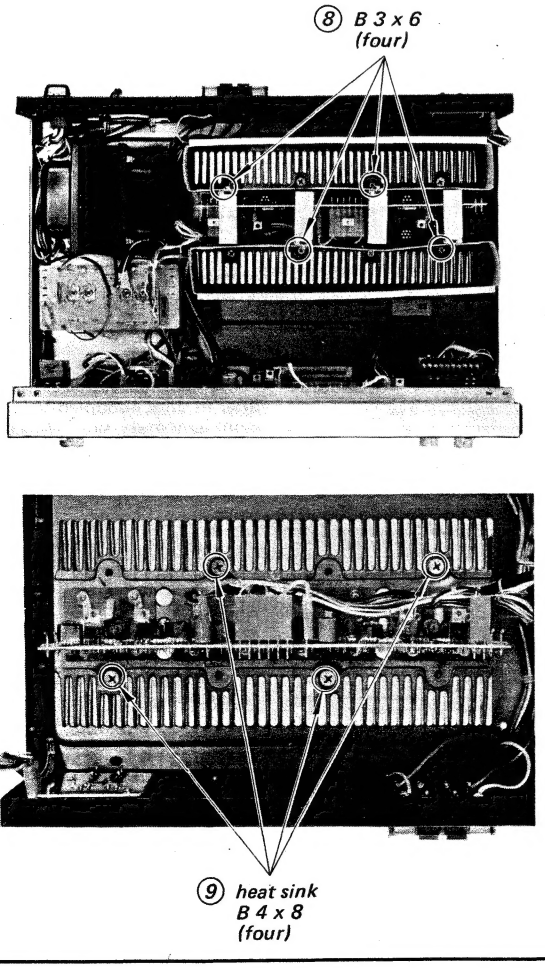
Class-A Amp Board Removal

Remove ⑦ .



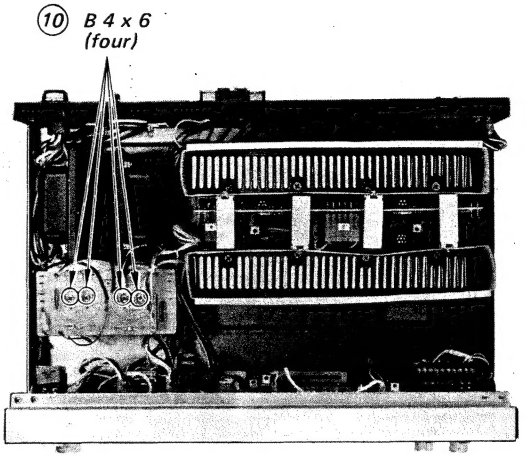
Class-B Amp/Protection Board Removal

1. Remove ⑧ and heat sink duct.
2. Remove ⑨ and heat sink with class-B amp/ protection board.



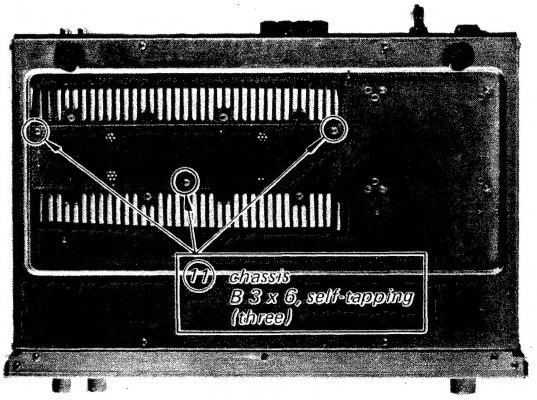
Power Supply Board Removal

Remove ⑩ .



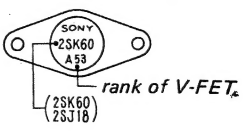
V-FET Replacement

1. Remove ⑪ and chassis.
2. Remove V-FET.



CAUTION

When replacing V-FET, use V-FET of same rank as shown below.



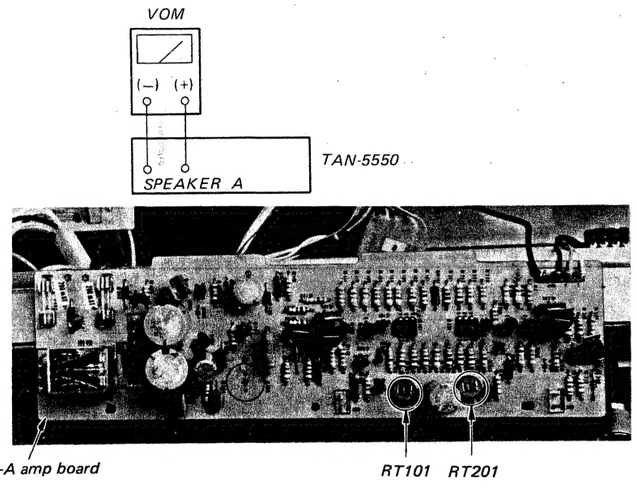
SECTION 2
ADJUSTMENTS

Note:

1. Apply the rated ac line voltage to the set directly. Do not increase the voltage gradually by using a variable transformer or other such instrument; this will cause a V-FET failure.
2. Turn on the set and wait a few minutes for warm-up.
3. Alternately repeat the two adjustments 2-3 times.

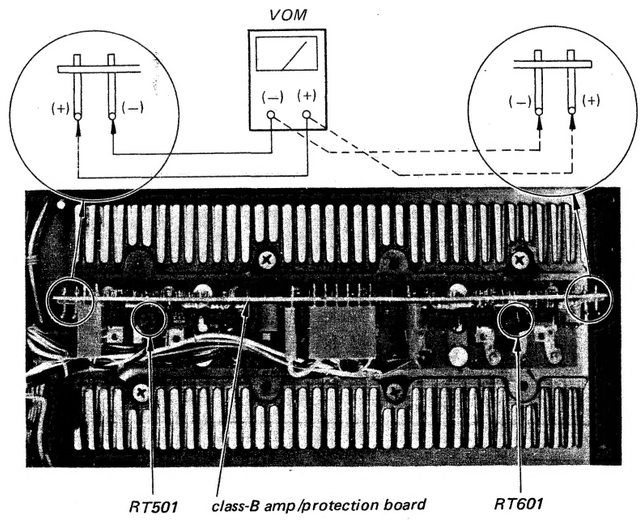
2-1. DC Balance Adjustment

Adjust RT101 (L-CH) and RT201 (R-CH) for OV dc.



2-2. DC Bias Adjustment

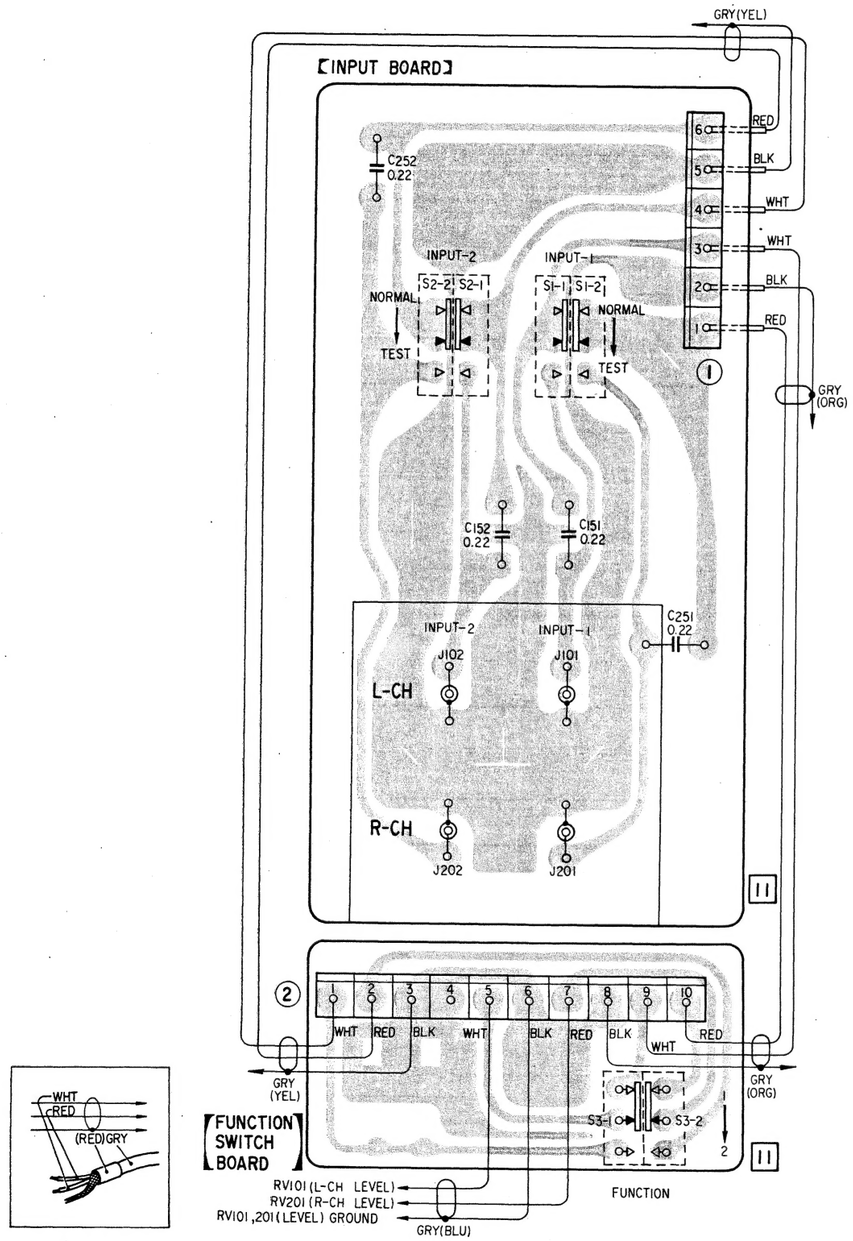
Adjust RT501 (L-CH) and RT601 (R-CH) for 65 mV dc.



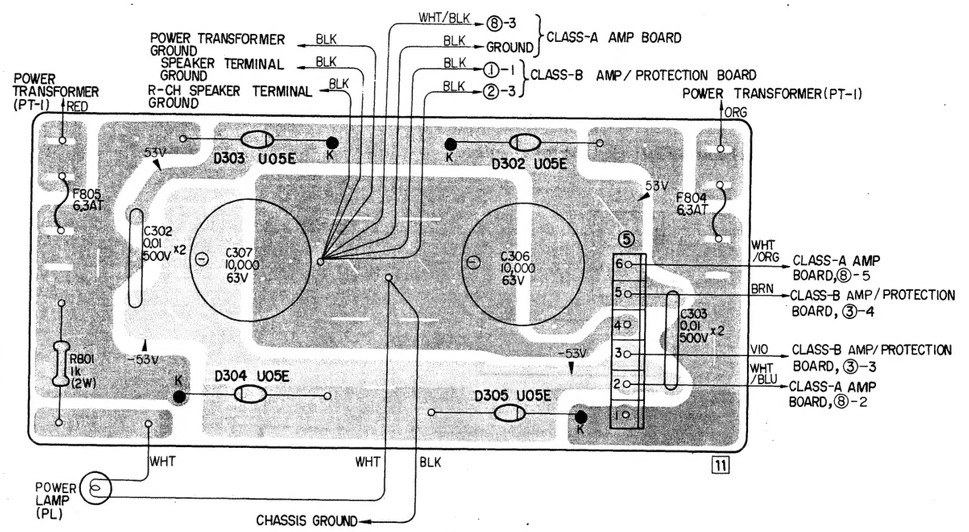
MEMO

SECTION 3
DIAGRAMS

3-1. MOUNTING DIAGRAM — Input Board and Function Switch Board —
— Conductor Side —



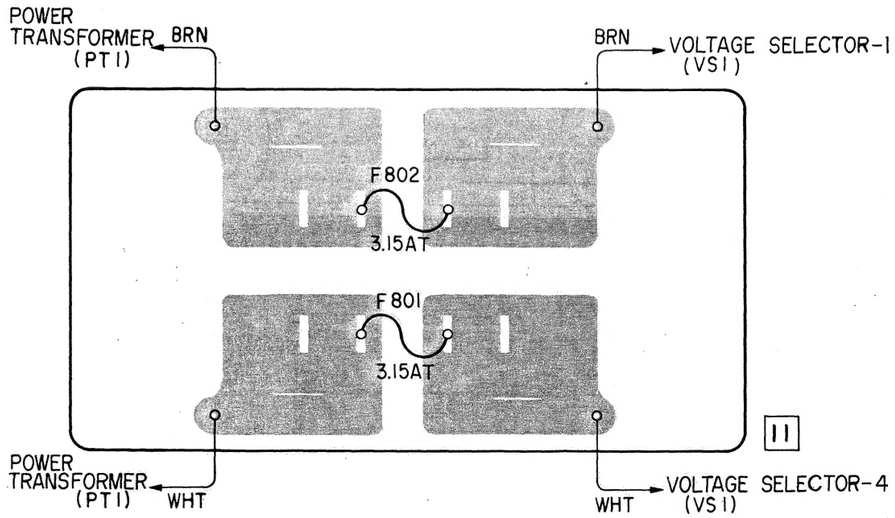
3-2. MOUNTING DIAGRAM — Power Supply Board —
— Conductor Side —



- k: cathode
- .... B+ Pattern
- .... B— Pattern
- Voltage variations may be noted due to normal production tolerances.

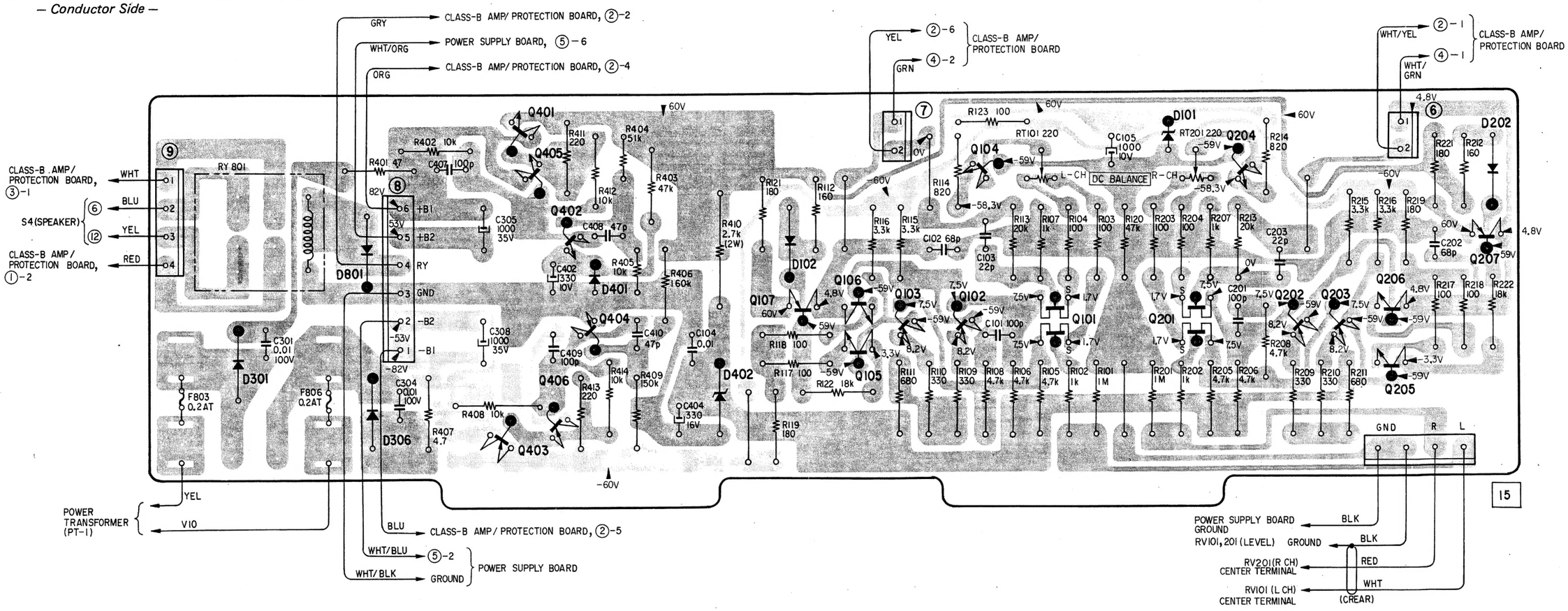
U-05E

3-3. MOUNTING DIAGRAM — Fuse Board —
— Conductor Side —



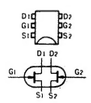
3-4. MOUNTING DIAGRAM — Class-A Amp Board —

— Conductor Side —

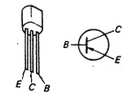


Q	401 405 402 403 406 404	107	106 105	103	104 102	101	201	204 202	203	206 205	207
D	801 301 306	401		402	102		101				202

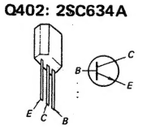
Q101, 201: 2SK58



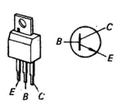
Q102, 202, Q103, 203: 2SA639S
Q406



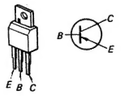
Q104, 204, Q405: 2SC926A
Q402: 2SC634A



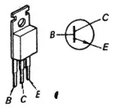
Q105, 205, Q106, 206: 2SC1124



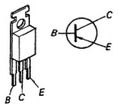
Q107, 207: 2SA835



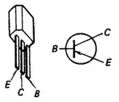
Q401: 2SC1061



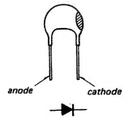
Q403: 2SA671



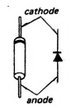
Q404: 2SA678



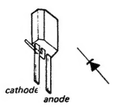
D101: VD-1221



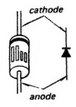
D102, 202: 1S1555



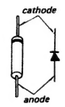
D401: 1T243



D402: EQA01-10



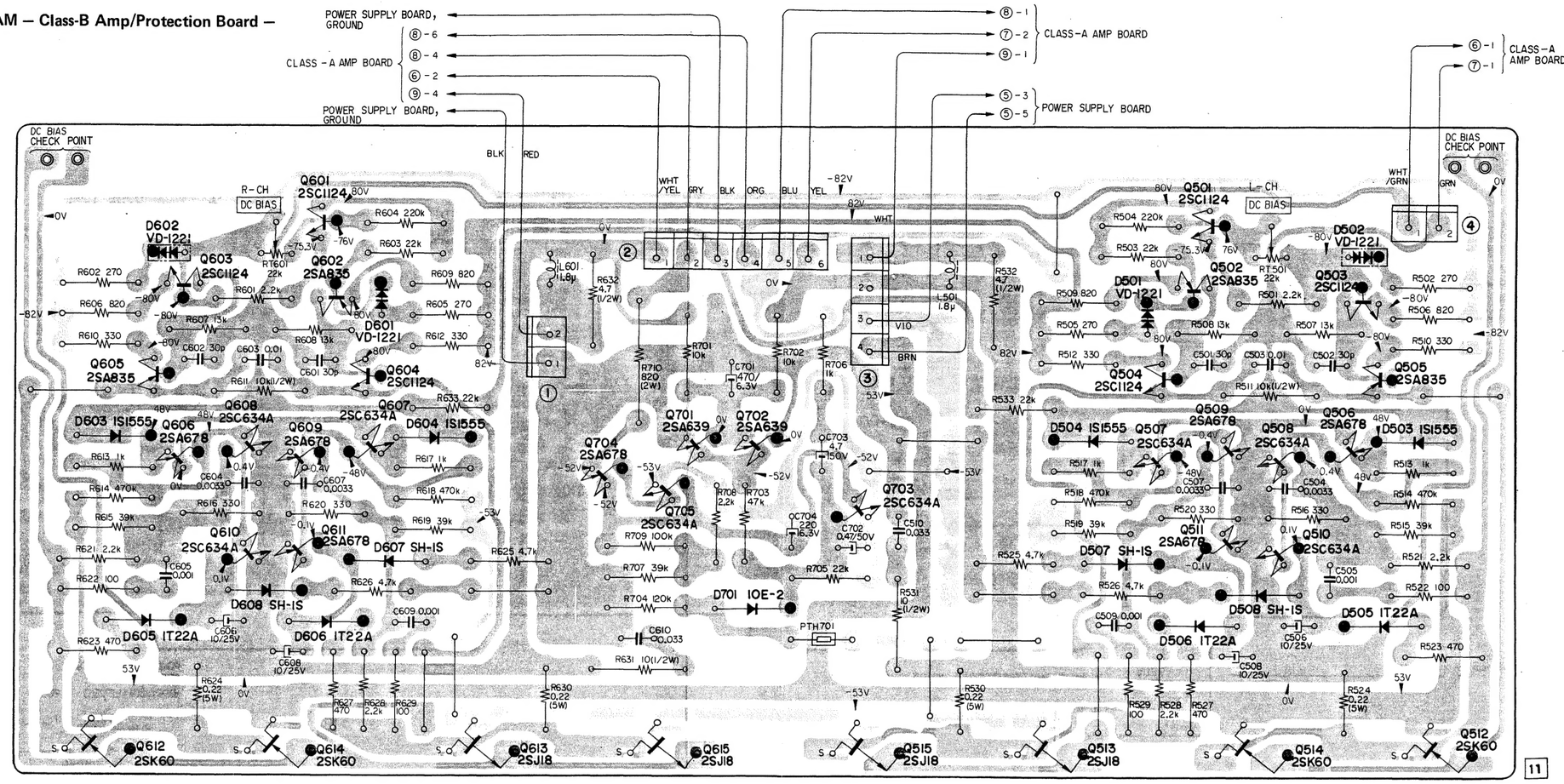
D306, 801: 10E-2



Note:

- Color in ( ) indicates color of sleeving over the end portion of shielded wire.
- All capacitors are in μF unless otherwise noted. 50 or less working volts are omitted except for electrolytic type. p=μμF
- All resistors are in Ω, ¼W, unless otherwise noted. k=1,000
- Voltages are DC with respect to ground unless otherwise noted. Readings are taken under no-signal conditions with a VOM (20 kΩ/V).
  ▒▒▒ . . . . . B+ Pattern
  ▒▒▒ . . . . . B— Pattern
- Voltage variations may be noted due to normal production tolerances.

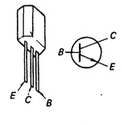
3-5. MOUNTING DIAGRAM — Class-B Amp/Protection Board —
— Conductor Side —



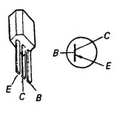
11

Q	601 602 603 604 605 606 607 608 609 610 611 612 613 614 615 701 702 703 704 705 501 502 503 504 505 506 507 508 509 510 511 512 513 514 515
D	601 602 603 604 605 606 607 608 701 501 502 503 504 505 506 507 508

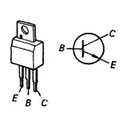
2SC634A



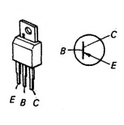
2SA678



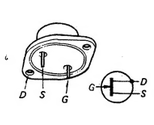
2SC1124



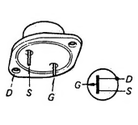
2SA835



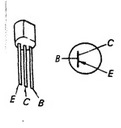
2SK60



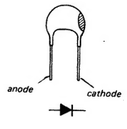
2SJ18



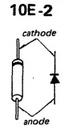
2SA639S



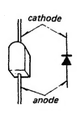
VD-1221



1T22A 1S1555 10E-2



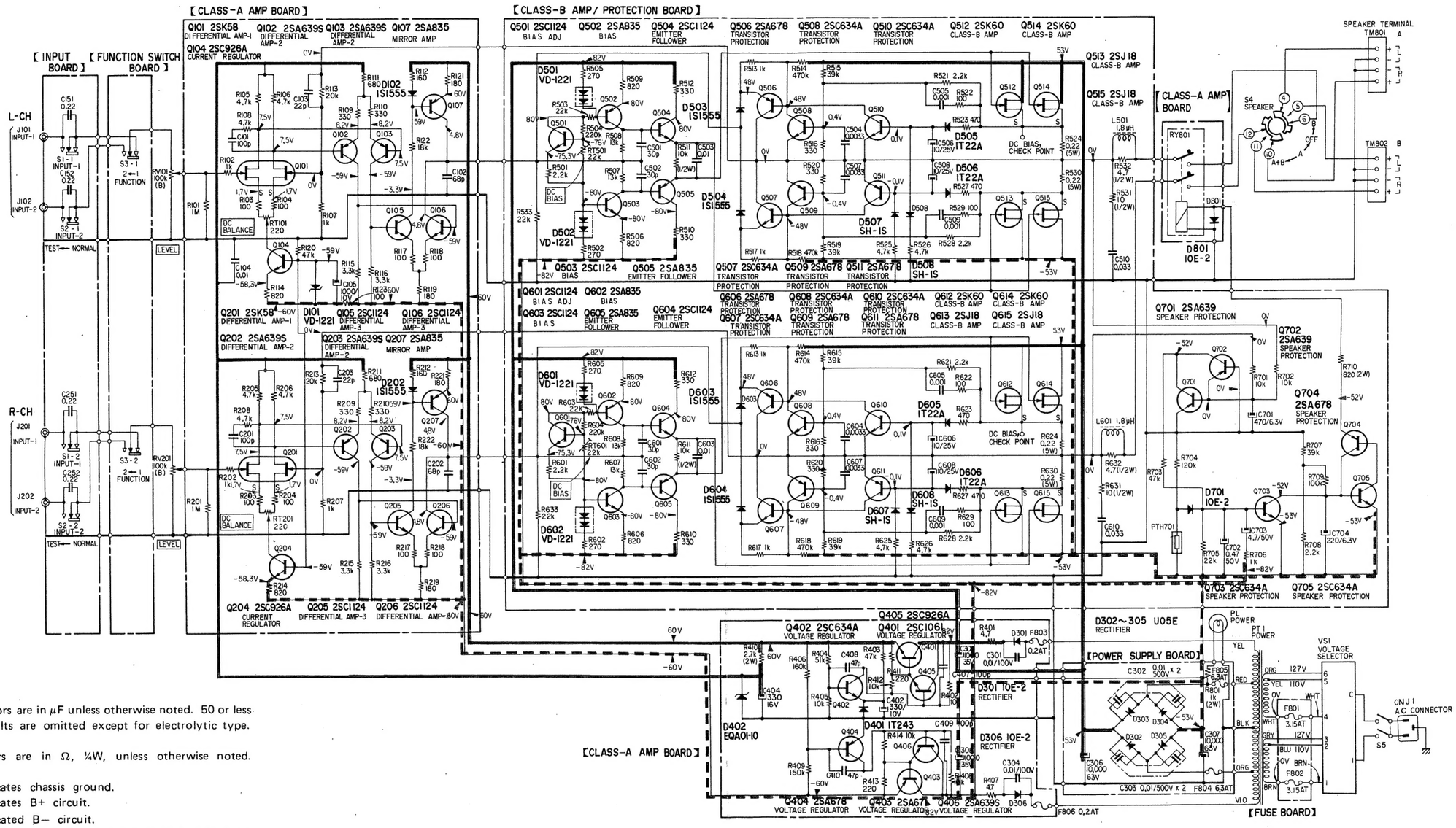
SH-1S



Note:

- All capacitors are in μF unless otherwise noted. 50 or less working volts are omitted except for electrolytic type. p=μμF
- All resistors are in Ω, ¼W, unless otherwise noted. k=1,000
- Voltages are DC with respect to ground unless otherwise noted. Readings are taken under no-signal conditions with a VOM (20 kΩ/V).
  ..... B+ Pattern
  ..... B− Pattern
- Voltage variations may be noted due to normal production tolerances.

3-6. SCHEMATIC DIAGRAM



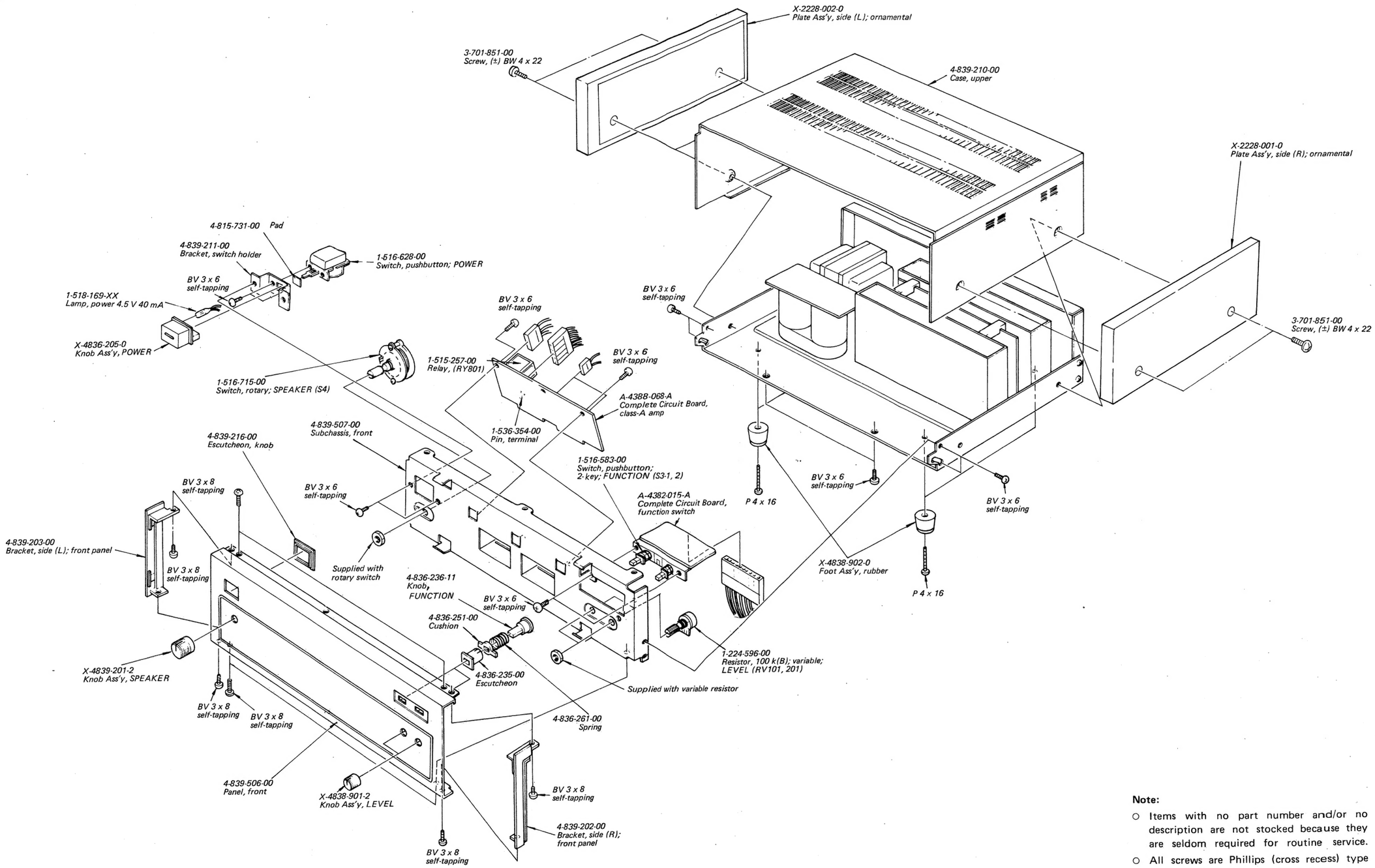
Note:

- All capacitors are in μF unless otherwise noted. 50 or less working volts are omitted except for electrolytic type. p=μμF
- All resistors are in Ω, ¼W, unless otherwise noted. k=1,000
- ⏚ indicates chassis ground.
- ▬▬ indicates B+ circuit.
- ▪▪▪▪ indicated B− circuit.
- Voltages are DC with respect to ground unless otherwise noted. Readings are taken under no-signal conditions with a VOM (20 kΩ/V).
  no mark: common
- Voltage variations may be noted due to normal production tolerances.
- Switch Mode:

SW. No.	NAME	POSITION
S1	INPUT-1	NORMAL
S2	INPUT-2	NORMAL
S3	FUNCTION	1
S4	SPEAKER	A
S5	POWER	OFF

SECTION 4
EXPLODED VIEWS

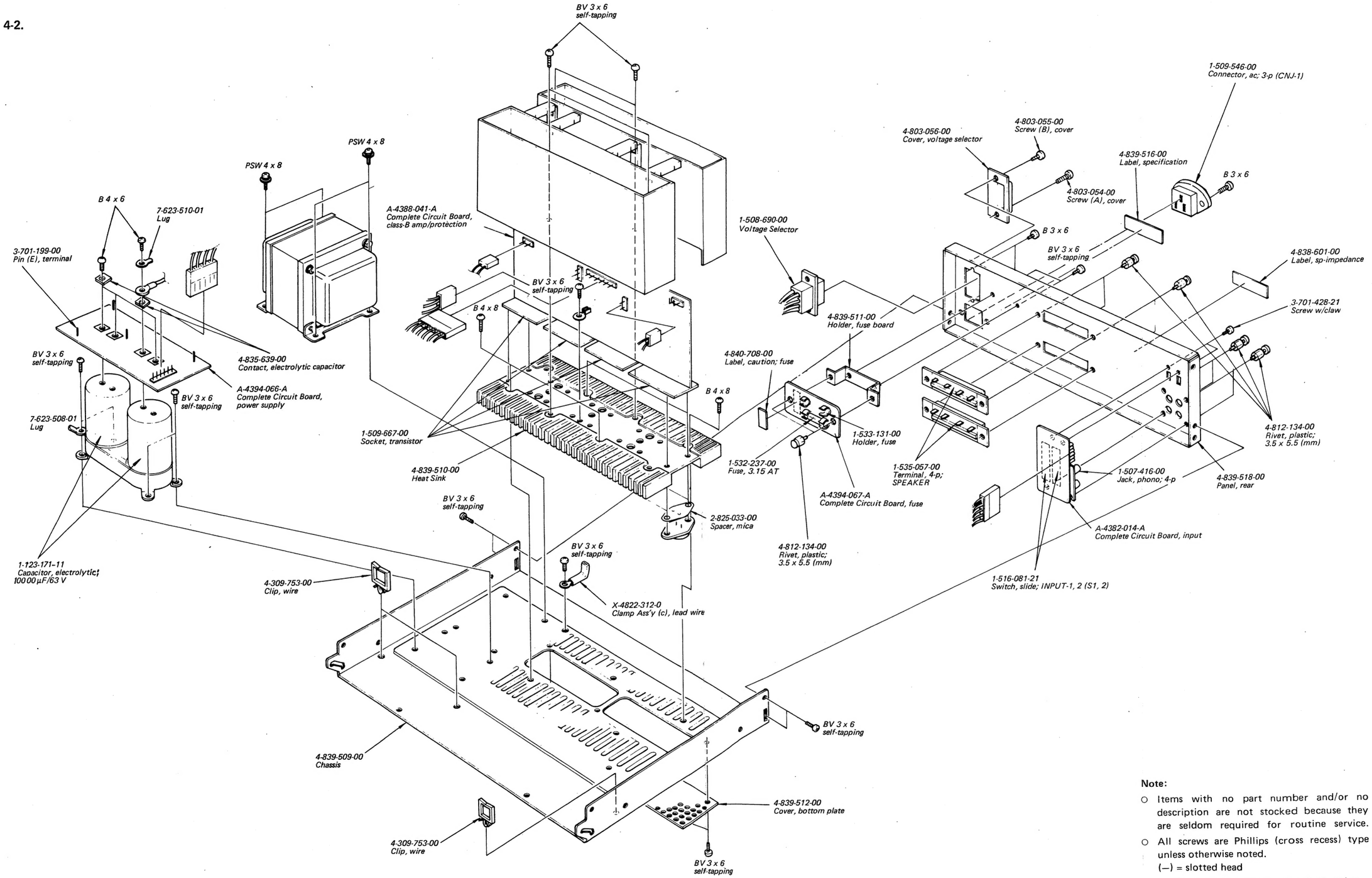
4-1.



Note:

- Items with no part number and/or no description are not stocked because they are seldom required for routine service.
- All screws are Phillips (cross recess) type unless otherwise noted.
  (—) = slotted head
- (□□T) shows the number of coils in spring.

4-2.



Note:

- Items with no part number and/or no description are not stocked because they are seldom required for routine service.
- All screws are Phillips (cross recess) type unless otherwise noted.
  (—) = slotted head
- (□□T) shows the number of coils in spring.

SECTION 5
PARTS LIST

5-1. ELECTRICAL PARTS

Ref. No.	Part No.	Description
		COMPLETE CIRCUIT BOARD
	A-4382-014-A	Input
	A-4382-015-A	Function Switch
	A-4388-068-A	Class-A amplifier
	A-4388-041-A	Class-B amplifier/protection
	A-4394-066-A	Power supply
	A-4394-067-A	Fuse
		SEMICONDUCTORS
		Transistors
Q101, 201		2SK58
Q102, 202, Q103, 203		2SA639S
Q104, 204		2SC926A
Q105, 205, Q106, 206		2SC1124
Q107, 207		2SA835
Q401		2SC1061
Q402		2SC634A
Q403		2SA671
Q404		2SA678
Q405		2SC926A
Q406		2SA639S
Q501, 601		2SC1124
Q502, 602		2SA835
Q503, 603, Q504, 604		2SC1124
Q505, 605		2SA835
Q506, 606		2SA678
Q507, 607, Q508, 608		2SC634A
Q509, 609		2SA678
Q510, 610		2SC634A
Q511, 611		2SA678
Q512, 612		2SK60
Q513, 613		2SJ18
Q514, 614		2SK60
Q515, 615		2SJ18
Q701, 702		2SA639
Q703, 705		2SC634A
Q704		2SA678
		Diodes
D101		VD-1221
D102		1S1555
D202		1S1555
D301		10E-2
D302 ~ 305		U05E
D306		10E-2
D401		1T243
D402		EQA01-10
D501, 502		VD-1221
D503, 504		1S1555
D505, 506		1T22A
D507, 508		SH-1S
D601, 602		VD-1221
D603, 604		1S1555
D605, 606		1T22A
D607, 608		SH-1S
D701		10E-2
D801		10E-2

CAPACITORS

All capacitors are in μF and electrolytic type unless otherwise indicated. 50 or less working volts are omitted except for electrolytic type. p = μμF

Ref. No.	Part No.	Description		
C101, 201	1-102-973-11	100 p		ceramic
C102, 202	1-101-888-11	68 p		ceramic
C103, 203	1-102-959-11	22 p		ceramic
C104	1-105-673-12	0.01		mylar
C105	1-121-943-11	1000	10 V	
C151, 251, C152, 252	1-105-689-12	0.22		mylar
C301	1-105-713-12	0.01	100 V	mylar
C302, 303	1-102-355-11	0.01	500 V	ceramic
C304	1-105-713-12	0.01	100 V	mylar
C305	1-121-388-11	1000	35 V	
C306, 307	1-123-171-11	10000	63 V	
C308	1-121-388-11	1000	35 V	
C402	1-121-805-11	330	10 V	
C404	1-121-521-11	330	16 V	
C407, 409	1-102-973-11	100 p		ceramic
C408, 410	1-102-880-11	47 p		ceramic
C501, 601, C502, 602	1-102-962-11	30 p		ceramic
C503, 603	1-105-673-12	0.01		mylar
C504, 604	1-105-667-12	0.0033		mylar
C505, 605	1-105-661-12	0.001		mylar
C506, 606	1-121-398-11	10	25 V	
C507, 607	1-105-667-12	0.0033		mylar
C508, 608	1-121-398-11	10	25 V	
C509, 609	1-105-661-12	0.001		mylar
C510, 610	1-105-679-12	0.033		mylar
C701	1-121-419-11	470	6.3 V	
C702	1-121-726-11	0.47	50 V	
C703	1-121-396-11	4.7	50 V	
C704	1-121-419-11	220	6.3 V	

RESISTORS

All resistors are in Ω. Regular-type ¼ W carbon and composition resistors are omitted. Check the schematic diagram for the resistance values. k = 1,000 , M = 1,000 k

Ref. No.	Part No.	Description		
R404	1-212-695-11	51 k	¼ W	metal-oxide
R405	1-212-678-11	10 k	¼ W	metal-oxide
R410	1-206-674-11	2.7 k	2 W	metal-oxide
R511, 611	1-202-597-11	10 k	½ W	composition
R524, 624, R530, 630	1-217-156-11	0.22	5 W	wirewound
R531, 631	1-202-525-11	10	½ W	composition
R532, 632	1-202-517-11	4.7	½ W	composition
R710	1-206-662-11	820	2 W	metal-oxide
R801	1-206-662-11	1 k	2 W	metal-oxide
RT101, RT201	1-224-550-00	220, adjustable		
RT501, RT601	1-224-491-00	22 k, adjustable		
RV101, RV201	1-224-596-00	100 k (B), variable; LEVEL		

SWITCHES

Ref. No.	Part No.	Description
S1, 2	1-516-081-21	Slide, INPUT-1, 2
S3-1, 2	1-516-583-00	Pushbutton, 2-key; FUNCTION
S4	1-516-715-00	Rotary, SPEAKER
S5	1-516-628-00	Pushbutton, POWER

FUSES

Ref. No.	Part No.	Description
F801, 802	1-532-237-00	3.15 AT
F803, 806	1-532-074-00	0.2 AT
F804, 805	1-532-325-00	6.3 AT

MISCELLANEOUS

Ref. No.	Part No.	Description
CNJ-1	1-509-546-00	Connector, ac; 3-p
J101, 201, J102, 202	1-507-416-00	Jack, phono; 4-p
L501, 601	1-407-592-00	Microinductor, 1.8 μH
PL	1-518-169-XX	Lamp, pilot; 4.5 V 40 mA
PT1	1-442-537-00	Transformer, power
PTH701	1-800-340-00	Thermistor, positive
RY801	1-515-257-00	Relay
TM801, TM802	1-535-057-00	Terminal, 4-p; SPEAKER
VS1	1-508-690-00	Voltage, selector
	1-508-648-00	Connector, male; 4-P
	1-508-649-00	Connector, male; 6-P
	1-508-650-00	Connector, male; 10-P

Ref. No.	*Part No.*	*Description*
	1-508-678-00	Connector, male; U-shaped
	1-508-684-00	Connector, male; 2-P
	1-508-692-00	Connector, male; 2-P
	1-508-748-00	Connector, female; 6-P
	1-509-667-00	Socket, transistor
	1-533-131-00	Holder, fuse
	1-536-354-00	Connector, male